

REMARKS

Claims 1-16 are pending. By this Amendment, no claims are cancelled, claims 1 and 3 are amended and no new claims are added.

35 U.S.C. § 103

The Office Action rejected claims 1-3 and 11-13 under 35 U.S.C. § 103(a) as being unpatentable over Fujihara et al. (4,852,985) in view of Thomas et al. (6,758,573). By this Amendment, Applicants have amended claim 1 to correct several typographical errors as well as to recite “a drive device for defined adjustment of said receiving apparatus such that said at least one LED can be selectively positioned upstream of a light emission aperture of said housing with the effective wavelength that is required for measurements and/or observations.”

Applicants respectfully submit that these limitations along with the other limitation in the claims are neither taught nor suggested by any of the prior art of record in the application. Specifically, the Thomas reference, which the Examiner relies on, only discloses all of the LEDs therein being located in front of an aperture simultaneously. The act of rotation as disclosed in Thomas is only used “for focusing and dispersing a LED beam emitted by the LED array.” Col. 3, lines 37-38. There is no indication of selecting LEDs emitting a particular wavelength as now recited in claim 1. For this reason alone, claim 1 should now be patentable over Fujihara in view of Thomas.

Further, the combination of Fujihara and Thomas does not render the claims of the present application obvious. Both Fujihara and Thomas disclose arrangements where a large number of LEDs are arranged laterally to an optical axis. These LED arrays take up a considerable amount of lateral space. The area from which light is emitted is huge and as a consequence these arrangements have a large etendue. Because of this, only a small portion of the emitted light throughput would be effective in illuminating the object plane of the objective of a microscope since microscopes have only a small etendue. Using this sort of illumination with a large number of LEDs would be extremely inefficient in the context of a microscope or other similar optical instrument. Therefore, a person skilled in the art would not consider the combination of Fujihara and Thomas in the context of the claimed invention. Further, Thomas teaches away from the invention as claimed because Thomas includes a variable resistor adapted to control the level of optical output (Abstract) while the present invention addresses the need to rapidly change the wavelengths of light output without the gradual change seen with electrical control of the LEDs especially by a variable resistor.

Secondly, a person skilled in the art would not combined Fujihara with Thomas because the Fujihara reference discloses LEDs of multiple different colors which can be controlled independently by color. The present invention creates a light source arrangement that permits rapid and precise positioning of LED radiation sources sequentially in the illumination ray path of a microscope. There would be no reason to add rotational movement as disclosed by Thomas with the arrangement disclosed in Fujihara because Fujihara individually controls the emission of different colors of the illuminating LEDs making it unnecessary to move different colored LEDs into an illumination ray path sequentially because they can be separately electrically controlled

already. In addition, one of skilled in the art would not likely to look at the combination of Fujihara and Thomas since Thomas discloses an arrangement which is normally used for household illumination which does not require significant accuracy or precision in positioning light sources as compared to the high accuracy and precision required in positioning light sources required for a microscope technique. Further, the combination of Fujihara and Thomas would lead to a construction where the array which is disclosed in Figure 3a of Fujihara can be rotated around an axis perpendicular to the plane of the paper. This would not provide any advantage.

With respect to claim 3, Applicant has amended claim 3 to recite “that the main emission direction of said at least one LED arranged thereon runs radial to said axis of rotation.” Nothing in Thomas discloses or suggest this limitation, therefore claim 3 is patentable over the prior art of record for at least this additional reason.

Further, Applicant respectfully submits that none of the prior art of record disclose or suggest all of the limitations of claim 12 either individually or in combination. In particular the limitation “whereby one of the LEDs of the plurality of LEDs may be selectively rotationally positioned upstream of the light emission aperture” is not disclosed in any of the prior art of record. Therefore, claim 12 is patentable over the prior art of record.

Claims 2-11 depend from claim 1 and should be patentable for at least the same reasons as claim 1. Claims 13-16 depend from claim 12 and are now patentable for at least the same reasons that claim 12 is patentable. Applicant respectfully requests that the Examiner withdraw the rejections.

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke, representing the name Paul C. Onderick.

Paul C. Onderick
Registration No. 45,354

Customer No. 24113
Patterson, Thunte, Skaar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 349-5766